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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,319	01/26/2001	Shi-Chang Wooh	MIT-116J	7522

7590 11/13/2002
Iandiorio & Teska
260 Bear Hill Road
Waltham, MA 02451-1018

EXAMINER

MOLLER, RICHARD ALAN

ART UNIT	PAPER NUMBER
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2856

DATE MAILED: 11/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

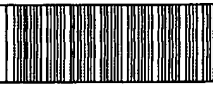
Office Action Summary

Application No.
09/770,319

Applicant(s)
Wooh

Examiner
RICHARD MOLLER

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2856



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on MAdt c 8/12/2002
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-29 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

RICHARD MOLLER
PRIMARY EXAMINER
RB 11/12/02

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FINAL DETAILED ACTION

Response to Amendment

1. This action is responsive to the Amendment filed August 12, 2002, in which claims 23 and 24 were amended, and claims 26-29 were added. Claims 22-29 are pending in this application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 22-29 are FINALLY rejected under 35 U.S.C. 102(b) as being anticipated by Monchalin (US 4,659,224), of record.
4. Re claims 22-25: '224 discloses a flaw detection system for detecting flaws in a medium, comprising: (Figs. 1 & 4): Transducer means comprise the elements taught in Figure 4, which are spaced from the medium to be inspected (work piece 20), wherein the transducer means "introduces" ultrasonic acoustic signals to the medium 20 with a predetermined frequency and then senses acoustic signals from the medium 20 Doppler shifted in frequency and are representative of any flaws in the medium 20. '224's transducer means uses laser 8 to emit a monochromatic coherent beam of light to excite acoustic signals in the medium 20 (col. 4, lines 55+). '224's incident laser beam is then modulated with a predetermined frequency (col. 2, line

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60). The Examiner takes Official Notice, that lasers inherently emit coherent light beams, which possess a specific frequency. Accordingly, '224's transducer propagates an incident beam to medium 20 with a predetermined carrier frequency.

Receiver means consists an optical frequency spectrum analyzer (interferometer 4) (see Figure 1; col. 4, lines 1-10), which serves as a separate receiver, for sensing acoustic signals from the medium 20.

Response to Arguments

5. Applicant's arguments filed August 12, 2002, have been fully considered but they are not persuasive.

6. Re claims 22-29, Applicant argues (Remarks, pg. 4) that the present invention is for detecting flaws in a medium by sensing "Doppler shift in a carrier caused by a flaw" by using sensors that sense "acoustic signals", such as "air-coupled transducers.

7. On the contrary, no recitation of air-coupled transducers are found in any of the claims. Rather, Monchalin '224 (Fig. 9a & 9b) teaches examples of the invention which teach- ultrasonic deformation of the medium produced by a carrier laser beam from laser 52, which is frequency modulated (FM) and directed to the surface of a medium which creates an acoustic wave due to ablation (col. 9, line 10) in the medium. The ultrasonic beam scatters the optical beam. The scattered optical beam is then directed to an interferometer to generate an optical interferometer signal, which is then processed, resulting in an electrical signal which indicates any Doppler shift

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of the scattered beam. The Doppler shift is the result of the interaction of the optical laser beam with the ultrasonic wave (col. 2, line 55 - col. 3, line 40 & col. 9, lines 1-20).

Accordingly, '224 teaches (claims 22-29) which recites transducer means for transmitting optical energy for "introducing to" and "sensing from" the medium an acoustic signal that propagates at a predetermined frequency (i.e., the FM frequency) and means (i.e. interferometer) "responsive to the sensed .propagating acoustic signal (i.e., the ultrasonic wave) the Doppler shift frequency "representative" of a flaw in the medium.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Moller, whose telephone number is (703)-308-6715. The examiner

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can normally be reached on Monday-Thursday from 8:30 AM - 6:00 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams, can be reached on (703)-305-4705. The fax number for this Group is (703)-308-7382.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703)-305-4900.



Richard A. Moller
Primary Examiner
November 12, 2002